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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ALLEN, CAMERON J

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/543,090

Applicant(s)

TEOH, ENG-CHYE

Examiner

CAMERON J. ALLEN

Art Unit

1797

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-14, 17, 18 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-14, 17-18, and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 9-14, 17-18, and 21 have been considered but are moot in view of the new ground(s) of rejection. New rejections follow, necessitated by amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mamontov SU 923961 in further view of Jasim US 5,716,528.

Regarding claim 9, Mamontov discloses a method for removing organic nitrogen from an aqueous liquid, said method comprising:

Adding a nitrosonium generator into said aqueous liquid to remove nitrogen from organic-based nitrogen contaminants at a controlled temperature (Abstract); but does not disclose oxidizing the aqueous liquid. Jasim does disclose the use of hydrogen peroxide to oxidize organic contaminants. It would have been obvious to one of ordinary skill in the art at the time of the invention to oxidize the liquid, for the added benefit of increased water treatment. (Jasim Abstract)

Regarding claim 10, Mamontov in view of Jasim teaches a method as claimed in claim 9, wherein the nitrosonium ion generator is a nitrous acid or a nitrite in an acidic media. (Mamontov Abstract)

Claims 13, 14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al. US 2004/0104181 A1 in further view of Ding et al. US 6,720,283 in further view of Jasim US 5,716,528.

Regarding claim 13, Shiota teaches a method for removing contaminants from an aqueous liquid, said method comprising:

adding a peroxide in the presence of an activated carbon catalyst at a controlled pH to oxidize and remove organic and inorganic contaminants, (0063) *The Examiner interprets adding peroxide to the activated carbon catalyst to be in the presence of the catalyst.* But does not teach wherein the catalyst is used as a particulate in a fixed bed reactor or moving bed reactor caused by the motion of fluid or gases, or by mechanical means through which the aqueous liquid to be treated comes in continuous contact with the catalyst in the presence of the peroxide solution. Ding does disclose the use of an activated carbon catalyst used in a fixed bed reactor. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a fixed bed reactor, since it is known in the art to be an effective way to support activated carbons. It is within the ordinary skill of one in the art to use known methods for activated carbons. Jasim does disclose the use of a peroxide solution to oxidize organic contaminants in the presence of a catalyst at a controlled pH. (Column 5 Example 4) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the peroxide in solution, since Jasim discloses the solution will produce the added benefit of reducing COD organic carbon and hydrocarbons. (Column 2 line 61-64)

Regarding claim 14, Shiota in view of Ding in further view of Jasim disclose a method as claimed in claim 13, wherein the peroxide is hydrogen peroxide Solution. (Jasim Column 5 Example 4))

Regarding claim 17, Shiota in view of Ding in further view of Jasim disclose a method as claimed in claim 13, wherein the controlled pH a pH range is selected from a pH range of 2 to 12, and the method is performed at atmospheric pressure. (Jasim Column 5 line 43) *The Examiner interprets that the method takes place in a beaker to be open to the atmosphere and to be at atmospheric pressure.*

Regarding claim 18, Shiota in view of Ding in further view of Jasim disclose a method as claimed in claim 14, wherein the method is performed at a controlled temperature , the controlled temperature selected from a range of 0 degree C to less than 50 degree C. (Jasim Column 5 line11).

Regarding claim 21, Shiota in view of Ding in further view of Jasim disclose a method as claimed in claim 18, wherein the controlled temperature is between 0° to 40°C. (Jasim Column 5 lines 11 and 38)

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Momontov as applied above in claims 9 and 10 above in further view of Shiota US 2004/0104181 A1.

Regarding claim 11, Mamontov teaches a method as claimed in claim 9, but does not disclose wherein oxidizing the aqueous liquid comprises adding a peroxide in the presence of an activated carbon catalyst. Shiota does disclose adding a peroxide in

the presence of an activated carbon (0063) *The Examiner interprets adding peroxide to the activated carbon catalyst to be in the presence of the catalyst*, (0063)

Regarding claim 12, Mamontov in view of Shiota disclose a method as claimed in claim 10, wherein the controlled temperature is between 0° to 100°C. (Shiota 0038)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMERON J. ALLEN whose telephone number is (571)270-3164. The examiner can normally be reached on M-Th 9-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJA

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797